

21. NOTE ON SNAKES FROM THE DISTRICT DANGS, GUJARAT STATE

During a wild life camp in the month of December 1987, I received a few snakes from Dangs district collected by Mr. Chandravar Jhala. The Dangs is a part of the Sahyadri ranges and is the most thickly forested area of Gujarat State.

I identified two species of snakes, namely *Uropeltis ellioti* (Gray) and *Ahaetulla pulverulentus* (Dum. & Bib.) which are recorded for the first time from the Dangs region. The details are as follow:

Uropeltis ellioti (Gray)

1 adult from Saputara village, Dangs. Collected in the first week of December, 1987. Total length 255 mm., tail 9 mm., V 157, C 6, Scale in row 17, Colour of the snake is dark brown with purple blue tint and small yellow spots on all over the body, yellow line on each sides of the neck, a yellow stripe on tail on both sides which form a transverse bar across the anal region.

Ahaetulla pulverulentus (Dum. & Bib.)

1 sub-adult from Pimpari village (30 km.

from Waghai), Dangs collected in the first week of December. Total length 623 mm., tail 225 mm., V 194, C 175; 8 Supralabials, 5th below the eye, 4th having two subocular. Colour fawn-grey with interscale skin colour black and white forming oblique bars, lower jaw white, a dark brown stripe from the neck to tail on the middle of the belly.

Another from Dhuladhha village-680 mm long collected on 28th October, 1987 by Mr. Karmavir Bhatt.

According to Smith (F.B.I. Vol. 3) *U. ellioti* is found on the hills of Western Ghats, south of the Goa Gap to Tinnevely, Eastern Ghats (Shevaroy, Coimbatore district, S. Arcot, Jalarpet, Visakhapatnam district, Ganjam), and *A. pulverulentus* is found in the Western Ghats (Karwar, N. Kanara, Nilgiris, Castle Rock, Nellampathy hills, Travancore).

The present record of the two species from Dangs district, Gujarat considerably extends their range.

ZOO INSPECTOR,
SAYAJI BAUG ZOO,
BARODA - 390 018,
January 28, 1988.

RAJU VYAS

22. PREDATION OF *MICROHYLA* TADPOLES BY *GAMBUSIA*

Embryos and tadpoles of the frog *Microhyla ornata* are being used in this laboratory to study the effects of pollutants and environmental factors on embryonic development. One of the authors (H.V.G.) has been collecting spawn of this frog from various localities

in Pune since 1977. During 1986, two of the ponds that were known to be the sites where *Microhyla* brood were found to be devoid of any *Microhyla* eggs and tadpoles. These ponds contain water almost throughout the year due to groundwater streams. The ponds,

however, contained tadpoles of *Rana* and *Bufo*. A survey of nearby places showed that adult *Microhyla* were present at these localities. A couple of spawns collected from another locality were then released in these ponds to see if there were any predators. It was observed that the eggs were rapidly consumed by *Gambusia affinis*, a fish which was presumably introduced to control mosquitoes and was present in large numbers. Later, tadpoles of various stages (newly hatched, 15 day-old, and hind-limb stage) were released to see if they survived predation. It was observed that none of the tadpoles could escape predation. Almost all of the released tadpoles were consumed by *Gambusia* within a few hours. This is in contrast with the observations of Rao (1917) who reported that *Microhyla* tadpoles escape predation due to offensive, acidic secretions of the cephalic glands. Rao further mentioned that fishes reject these tadpoles even if forced. Such secretions, if present, do not seem to repel *Gambusia*. Regarding the presence of *Bufo* and *Rana* tadpoles, it appears that many of these tadpoles escape predation because of their bottom feeding habits and comparatively active movements. Further, the number of eggs per spawn is quite large in both *Bufo* and *Rana*, a factor which helps to maintain population despite predation. *Microhyla* tadpoles are filter feeders and stay almost

stationary at the surface of the water and thus fall easy prey to *Gambusia*, a fish that is very active at the surface.

Beebee (1984) also observed that toads freely breed in large ponds with fish. While discussing the success and failure of amphibians in garden ponds with fish, he further pointed out that presence of fish is not always catastrophic, and frogs do breed in ponds with fish; precise shape of the pond as well as the number of fish are probably crucial factors influencing tadpole survival.

Since most frogs, including *M. ornata*, breed in temporary rainwater pools there is little possibility of presence of large predatory fishes. Yet, when ponds with fish are chosen as breeding sites by *Microhyla*, the survival of eggs and tadpoles must be extremely low as compared with those of *Rana* and *Bufo*. The pond in question had only *Gambusia* and no other fish. It may be pointed out here that *Gambusia* has been reported to have adversely affected carp fisheries in reservoirs (Menon 1977). Thus it seems desirable that such fishes are not indiscriminately introduced in water bodies.

We are grateful to the authorities of Modern College for providing necessary facilities. Anand Padhye is thankful to U.G.C. New Delhi, for Junior Research Fellowship.

POST-GRADUATE RESEARCH CENTRE,
DEPARTMENT OF ZOOLOGY,
MODERN COLLEGE,
PUNE 411 005,
June 17, 1987.

H. V. GHATE
A. D. PADHYE

REFERENCES

- BEEBEE, T. J. C. (1984): Success and failure of amphibians in garden ponds. *Brit. Herpetol. Soc. Bull.* 9: 21-24.
MENON, A. G. K. (1977): Fish and malaria control. *Sci. Cult.* 43: 110-114.
RAO, C. R. N. (1917): On the occurrence of iridocytes in the larva of *Microhyla ornata* (Boul.). *Rec. Indian Mus.* 13: 281-292.